(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property **Organization**

International Bureau



(43) International Publication Date 28 July 2005 (28.07.2005)

PCT

(10) International Publication Number WO 2005/069058 A1

(51) International Patent Classification⁷: 27/28, H04N 13/00

G02B 27/22,

(21) International Application Number:

PCT/IB2005/050080

(22) International Filing Date: 6 January 2005 (06.01.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0400372.9

9 January 2004 (09.01.2004) GB

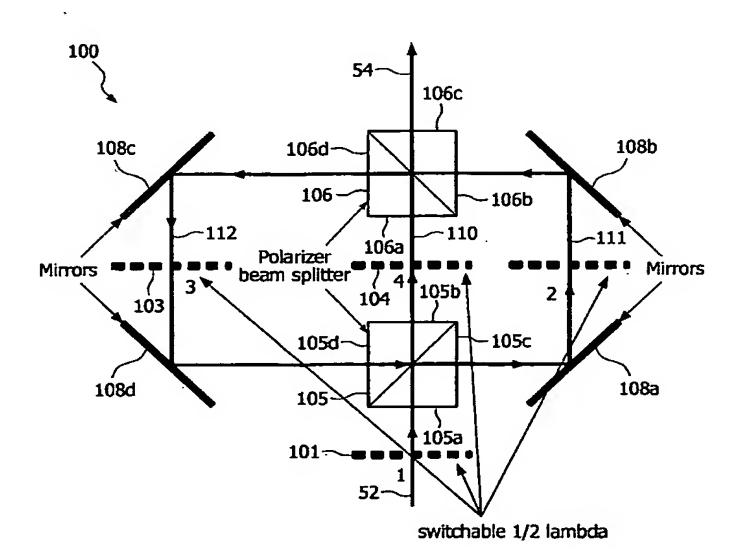
- (71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): IJZERMAN, Willem, L. [NL/NL]; c/o Philips Intellectual Property, & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB). KRIJN, Marcellinus, P., C., M. [NL/NL]; c/o Philips Intellectual Property, & Standards, Cross Oak

Lane, Redhill Surrey RH1 5HA (GB). SALTERS, Bart, A. [NL/NL]; c/o Philips Intellectual Property, & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB).

- (74) Agents: WILLIAMSON, Paul, L. et al.; c/o Philips Intellectual Property, & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: OPTICAL PATH LENGTH ADJUSTER



(57) Abstract: An optical path length adjuster enables electro-optical control of a physical path length between two optical elements, suitable for use in the adjustment of an optical path length within three dimensional display devices that generate a virtual image within a defined imaging volume. The adjuster varies an optical path length between an input optical path and an output optical path and includes: a first polarisation switch for selecting a polarisation state for an input beam on the input optical path; first and second beam splitters having at least two possible optical paths of different lengths therebetween, for passing the input beam along a selected one of said at least two possible optical paths according to the selected polarisation state of the input beam and for providing an output beam of light, on said optical output path, that has travelled along the selected optical path.

WO 2005/069058 A1



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ,

NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.